

PATENT COOPERATION TREATY

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From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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PCT

valid date
for
time limitWRITTEN OPINION
Confirmation
PCT Rule 66
FAX-Bestätigung
faxDate of mailing
(day/month/year)

(02.02.00) 04.02.00

Applicant's or agent's file reference

AVI98-01pA

REPLY DUE

within 3 month(s)
from the above date of mailing

International application No.

PCT/US99/08334

International filing date (day/month/year)

15/04/1999

Priority date (day/month/year)

24/04/1998

International Patent Classification (IPC) or both national classification and IPC

H04L12/00

FOREIGN DOCKETING

initial

Applicant

AVICI SYSTEMS

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1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.

ANNUITY DOCKETING

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2. This opinion contains indications relating to the following items:

ANR AND

I ☒ Basis of the opinionII ☒ PriorityIII ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicabilityIV ☐ Lack of unity of inventionV ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statementVI ☒ Certain document citedVII ☒ Certain defects in the international applicationVIII ☒ Certain observations on the international applicationAnnuity (Tax) Card
Other

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3. The applicant is hereby **invited to reply** to this opinion.**When?** See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).**How?** By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.**Also:** For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.**If no reply is filed**, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 24/08/2000.

Name and mailing address of the international preliminary examining authority:

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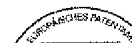
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WRITTEN OPINION

International application No. PCT/US99/08334

I. Basis of the opinion

1. This opinion has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed".*):

Description, pages:

1-10 as originally filed

Claims, No.:

1-36 as originally filed

Drawings, sheets:

1/5-5/5 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

II. Priority

1. ☐ This opinion has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
- ☐ copy of the earlier application whose priority has been claimed.
 - ☐ translation of the earlier application whose priority has been claimed.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid.

Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

WRITTEN OPINION

International application No. PCT/US99/08334

3. Additional observations, if necessary:

see separate sheet

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims
Inventive step (IS)	Claims 1-36
Industrial applicability (IA)	Claims

2. Citations and explanations

see separate sheet

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**WRITTEN OPINION
SEPARATE SHEET**

International application No. PCT/US99/08334

Re Item II

Priority

The following document is not comprised in the state of the art relevant to the present application:

Publication number: **EP-A-0 863 646**

Publication date: 09.09.1998

Filing date: 05.03.1998

Priority date: 07.03.1997

However if it were determined that the priority of the present application should be declared invalid, then the above-cited document could become relevant for the evaluation of the aspects relating to inventive step.

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1 The subject-matter of **claim 20** which has the broadest scope is not inventive, Article 33(3), over **D1 = US-A-5 546 379**.

D1 discloses a method of routing packets in a network (abstract; column 11, line 62). The method comprises the steps of selecting one of plural trunks forming a composite trunks to the destination (column 4, lines 24 - 25; column 5, lines 11 - 18; paragraph bridging columns 5 and 6; column 6, lines 36 - 46; Fig. 4, command line "set deviceToUse <- D"; Fig. 5, box "selection means"), and forwarding the packets toward the destination on the selected trunk (column 2, line 15; Fig. 4, last line; column 15, lines 59 - 61).

The difference between the subject-matter of claim 20 and this known method is that a destination of the packets is identified. This, however, is a common measure in the art of packet routing.

- 2 It is noted that documents **D1 = 'Multilink PPP: One Big Virtual WAN Pipe' by G.E. Conant [Data Communications, US, McGraw Hill, New York, vol. 24, no. 13, 21 September 1995 (1995-09-21), page 85-88,90, ISSN: 0363-6399]** (Fig. 2; page 85, second column, paragraph "Big protocol tent"; page 85, third column, lines 7 - 10; page 87, third column, lines 2 - 5; page 88, third column, last paragraph) and **D3 = EP-A-0 649 098** (abstract; claim 1; column 4, lines 12 - 17; column 9, lines 16 - 19; column 1, lines 48 - 53; column 12, lines 20 - 29; column 12, lines 30 - 33) also disclose routing methods based on the same principle of selecting a trunk within a composite trunk.
- 3 Apparatus **claim 1** corresponds to method claim 20 and in addition specifies a routing fabric. It is however a common measure to use a routing fabric for switching, i.e. forwarding internally, packets within a router. Therefore, claim 1 also does not fulfill the requirement of inventive step, Article 33(3).
- 4 The additional features of the **dependent claims 2 - 19 and 21 - 36** are either also known from the prior art (load balancing, claims 4, 5, 14, 15, 23, 24, 31, 32; look-up table, claims 7, 26; Internet and IP, claims 12, 35) or are common measures (flow integrity, claims 2, 3, 10, 11, 19, 21, 22, 29, 30; distance minimization, claims 6, 16, 25, 33; mapping alternatives, claims 8, 9, 17, 18, 27, 28; routing fabric topology, claims 13, 36; final destination identifier, claim 34).

Re Item VI

Certain documents cited

The following document is cited according to Rule 70.10:

Patent No.:	EP-A-0 910 195
Publication date:	21.04.1999
Filing date:	17.09.199
Priority date:	23.09.1997

Re Item VII

Certain defects in the international application

- 1 Documents D1 - D3 should be acknowledged in the description, Rule 5.1(a)(ii).
- 2 The two-part form, Rule 6.3(b), should be used for the independent claims, with a pre-characterising part that correctly reflects the closest prior art (D1).
- 3 The passages "which is incorporated herein by reference in its entirety" (page 6, lines 15 - 16) and "which is incorporated herein by reference" (page 7, line 10) should be removed from the description since the application should be self-contained, cf. PCT Guidelines II, 4.17.
- 4 The words "spirit and" in the last paragraph on page 10 should be removed, cf. PCT Guidelines III, 4.3a.

The same is noted with respect to the last sentence of the same paragraph which also tries to expand the extent of protection in a vague and imprecisely defined way.

Re Item VIII

Certain observations on the international application

The following is noted with respect to the requirements of conciseness and clarity, Article 6:

- 1 Dependent **claims 2, 10 and 19** specify identical features. As a consequence, redundancy is contained in the claims which therefore lack conciseness. These three claims should be replaced by a single claim comprising appropriate references to the claims they depend on.

The same is noted with respect to the following groups of claims: {**3,11**}, {**4,14**}, {**5,15**}, {**6,16**}, {**23,31**}, {**24,32**}, {**25,33**}.

**WRITTEN OPINION
SEPARATE SHEET**

International application No. PCT/US99/08334

- 2 Although directed to apparatus, **claims 1 - 7, 10, 11, 14 - 16 and 19** contain method features ("selects", "maintains", "balances", "favors", "determines"), whereby doubt is cast as to the category of the claims.
- 3 The following terms lack an antecedent and are therefore not clear:
 - **the** router (**claims 25, 33 and 36**),
 - **the** routing within a routing fabric, **claim 30**).
- 4 The following terms are ambiguous and therefore not clear:
 - a flow (**claim 3**; the flow of claim 2 or a different one? Similarly, **claim 22**),
 - a composite port (**claim 7**; the composite port of claim 1 or a different one?),
 - a forwarding table (**claim 18**; the forwarding table of claim 17 or a different one?),
 - outputs (**claim 18**; what is meant: output ports, outgoing trunks, or outgoing composite trunks?),
 - a composite trunk (**claim 21**; the composite trunk of claim 20 or a different one? Similarly, **claims 23, 24, 27, 31, 32**),
 - a single route (**claim 22**; route within the fabric or within the network?),
 - a routing fabric (**claim 30**; the routing fabric of claim 29 or a different one?),
 - the packet (**claim 34**; which one of the (plural) packets of claim 20?).
- 5 In the expressions "a router as claimed in [...]" and "a method as claimed in [...]" (**claims 2 - 19 and 21 - 36**), the indefinite article "a" should be replaced by the definite article "the" for clarification.
- 6 **Claim 22** lacks a clear syntactical structure, and therefore clarity, and should be redrafted.
- 7 **Claim 29** defines its subject-matter by a result to be obtained, cf. PCT Guidelines, III, 4.7.



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One of these labels should be affixed to a prominent place in the upper part of the letter or form etc. which you are filing.